

REMARKS

Claims 4, 6 – 11, and 13-20 are now pending in the application. Claims 4, 13, 14, and 15 are now amended. Claims 17-20 are now added. Claims 5 and 12 are now cancelled. The claim amendments and new claims are fully supported by the application as filed and do not introduce new subject matter. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

DRAWINGS

The drawings stand objected to for allegedly failing to show every feature of the invention specified in the claims. Specifically, the Office Action asserts that the drawings fail to show the features of Claims 5 and 9.

Claim 5 is now cancelled. Therefore, the drawing objection of Claim 5 is now moot.

The Office Action alleges that the following features of Claim 9 are not illustrated in the drawings: “the suction pipeline gate valve is made of a three-way valve having an atmosphere releasing port;” and “the first control means opens the atmosphere releasing port simultaneously with closing of the suction pipeline gate valve and opens the flow rate regulating valve again.”

Applicants submit that with reference to Figure 8, for example, the “three-way” valve is illustrated at 123 and described at paragraph [0100], which recites, “...it is preferable to form the aforementioned cap-side gate valve 123 by using a three-way valve having an atmosphere releasing port.” The first control means is illustrated in Figure 8 at

reference numeral 6. The atmosphere releasing port is part of the cap-side gate valve 123 as described in paragraph [0100]. The flow rate regulating valve is at 196.

Applicants submit that all of the features of Claim 9 are illustrated in the drawings. Therefore, Applicants respectfully request reconsideration and withdrawal of the drawing objection of Claim 9.

CLAIM OBJECTIONS

Claims 14-16 stand objected to because the Office Action asserts that the preamble of Claims 14-16 is inconsistent with the parent claim.

Applicants submit that Claims 14-16 are in proper dependent form and that the preambles are consistent with the parent claim. There is no requirement that dependent claims have the same preamble as parent claims. Applicants respectfully request reconsideration and withdrawal of the objections to Claims 14-16.

REJECTION UNDER 35 U.S.C. § 112

Claims 4-14 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point and distinctly claim the subject matter which Applicants regard as the invention. This rejection is respectfully traversed.

Applicants now amend Claim 4 to positively recite the following features in the body of the claim: a cap, a function liquid droplet ejection head; a plurality of nozzles, an ejector, and a compressed air source. Applicants respectfully submit that the metes and bounds of amended Claim 4 are clear.

The Office Action alleges that Claim 4 lacks antecedent basis for the feature of “a cap” in line 2. Applicants disagree and ask the Examiner for clarification of this rejection. The recitation of “a cap” in line 2 is the first such recitation in the independent claims. Therefore, antecedent basis is not necessary.

The Office Action alleges that “a cap” in lines 2-3 of Claim 13 lacks antecedent basis. This recitation of “a cap” is the first such recitation in the independent claim. Therefore, antecedent basis is not necessary.

The Office Action alleges that the feature “all nozzles” in line 6 of Claim 13 lacks antecedent basis. Applicants believe that the amendments to Claim 13 render this objection moot.

Applicants now cancel Claim 12. Therefore, this Section 112 rejection of Claim 12 is now moot.

With respect to Claim 13, Applicants believe that the amendments to Claim 13 render the Section 112 rejection moot.

The Office Action rejects Claims 14-16 because the claims recite “using” but fail to recite use steps. Applicants now amend Claims 14 and 15 to delete “using.” Therefore, Applicants respectfully request reconsideration and withdrawal of this rejection.

As set forth above, the claims are in compliance with Section 112. Therefore, Applicants respectfully request reconsideration and withdrawal of this Section 112 rejection.

REJECTION UNDER 35 U.S.C. § 102

Claims 4-7, 10, and 13 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Wallace (U.S. Pat. No. 4,362,572).

Claims 4, 5, 10, 11, and 13 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Yamazaki et al. (U.S. Pat. No. 4,296,418).

These rejections are respectfully traversed.

According to the Office Action, the Wallace reference discloses a cap 20; an ejector 14, 18; a function liquid droplet ejection head 10; and nozzles 28.

Applicants disagree with the Office Action's interpretation of the Wallace reference. As illustrated in Figure 1 of Wallace and described in the specification, Wallace discloses a hose/tube 14, a connector 16, a block 18, and a rotary valve 20. The vacuum source 12 applies a vacuum to the head 10 via the tube 14 to clean the head 10. The valve 20 opens to expose the head 10 to the vacuum and closes to block the vacuum.

Wallace fails to disclose or suggest a cap adapted to be brought into close contact with the function liquid droplet ejection head; an ejector in fluid-flow communication with the cap, the ejector having a negative pressure sucking all nozzles of the function liquid droplet ejection head through the cap; and a working fluid source for supplying the ejector with a flow of working fluid to create the negative pressure, as set forth in amended Claim 4.

Wallace fails to disclose or suggest a cap adapted to be brought in close contact with a function liquid droplet ejection head; a plurality of nozzles provided in the function liquid droplet ejection head; an ejector in fluid-flow communication with the cap, the

ejector having a negative pressure sucking the nozzles through the cap; a working fluid supply source supplying the ejector with a flow of working fluid to create the negative pressure; wherein the function liquid droplet ejection head ejects function liquid onto a workpiece, as set forth in amended Claim 13.

Further, Wallace fails to disclose or suggest: wherein the ejector comprises a supply port receiving the flow of working fluid from a working fluid source, a suction port communicating with the supply port and sucking the function liquid therein due to the negative pressure created by the flow of the working fluid; and a discharge port communicating with the supply port and the suction port, the discharge port discharging the working fluid from the supply port and the function liquid from the suction port, as set forth in new Claims 18 and 20.

The Yamazaki et al. reference appears to disclose, with reference to Figure 1, a nozzle 14 having a cap 28. A flexible connector 38 is attached to the cap. If the nozzle 14 becomes clogged the cap 28 is moved in a position covering the nozzle. The compressor 31 directs a dissolving solvent and air through the flexible connector 38 to the nozzle 14 to dissolve the clogged ink. The Yamazaki et al. reference fails to disclose or suggest the ejector of amended Claims 4 and 13.

Specifically, the flexible connector 38 is not, and is not suggested to be, an ejector having a negative pressure and in fluid-flow communication with the cap, the ejector sucks said nozzles of the function liquid droplet ejection head through the cap, as set forth in amended Claims 4 and 13.

Further, the Yamazaki et al. reference fails to disclose or suggest: wherein the ejector comprises a supply port, a discharge port, and a suction port, as set forth in new

Claims 17 and 19; and an ejector that is free of moving parts, as set forth in new Claims 18 and 20.

The Wallace and Yamazaki et al. references each fail to disclose each and every feature of amended Claims 4 and 13, as well as those claims dependent therefrom. Applicants respectfully request reconsideration and withdrawal of this Section 102 rejection.

REJECTION UNDER 35 U.S.C. § 103

Claims 8 and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Wallace (U.S. Pat. No. 4,362,572).

Claims 13-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the Wallace reference or the Yamazaki et al. reference.

These rejections are respectfully traversed.

Claims 8 and 9 are both dependent upon Claim 4. As set forth above, amended Claim 4 is now in a condition for allowance. Therefore, Claims 8 and 9 dependent therefrom are now in a condition for allowance at least for the reasons set forth above with respect to Claim 4.

With respect to the rejection of Claim 13, both the Wallace and the Yamazaki et al. references fail to suggest an ejector having a negative pressure that is in fluid-flow communication with a cap in contact with a head, the ejector sucking nozzles of an ejection head through the cap. Therefore, the Wallace and Yamazaki et al. references fail to individually suggest Claim 13.

Combination of the Wallace and Yamazaki et al. references also fails to suggest Claim 13. Combination of the references fails to suggest a cap in close contact with a function liquid droplet ejection head; an ejector having a negative pressure that is in fluid-flow communication with the cap, the ejector sucks the nozzles through the cap, as set forth in amended Claim 13. The Yamazaki et al. reference only discloses injection of air and fluid through the cap to clean the head and it would not be possible to modify Yamazaki et al. in light of Wallace so that the connector 38 sucks fluid through the cap.

CONCLUSION

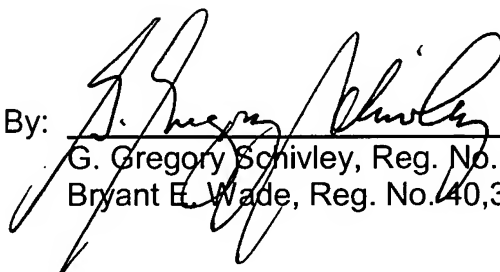
It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

Dated: _____

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By: _____



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